

# Seth Harris

# Curriculum Vitae

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Drew University  
Mathematics and Computer Science  
Hall of Sciences 302  
Madison, NJ 07940

sharris2@drew.edu  
Office Phone: (973) 408 3401  
users.drew.edu/sharris2/

## EDUCATION

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### Dartmouth College

Ph.D., Mathematics June 2017

Advisor: Marcia Groszek

Thesis: *On-Line Algorithms and Reverse Mathematics*

Research Areas: Logic, Computability Theory

Master of Arts, Mathematics June 2011

### Case Western Reserve University

Master of Science, Mathematics January 2005

Bachelor of Science, Mathematics, magna cum laude May 2003

Minor in Music

## TEACHING

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**Associate Teaching Professor** – Drew University 2021–present

**Assistant Teaching Professor** – Drew University 2015–2021

Math 100: Preparation for Calculus

Math 150: Calculus and Analytic Geometry I

Math 151: Calculus and Analytic Geometry II

Math 200: Topics in Single and Multivariable Calculus

Math 303: Linear Algebra

Math 310: Foundations of Higher Mathematics

Math 315: Differential Equations

Math 335: Abstract Algebra

Math 340/400: Graph Theory

Math 340/400: Mathematical Logic

Math 340/400: Number Theory and Cryptography

Math 340/400: Topology

**Graduate Instructor** – Dartmouth College 2011–2012

Math 1: Calculus With Algebra

Math 20: Discrete Probability

<b>Graduate Teaching Assistant</b> – Dartmouth College	2009–2013
Math 3: Introduction to Calculus	
Math 17: Game Theory	
Math 22: Linear Algebra With Applications	
Math 23: Differential Equations	
<b>Instructor</b> – Massachusetts College of Pharmacy and Health Sciences	2006–2009
MAT 141: Algebra and Trigonometry	
MAT 150: Precalculus	
MAT 151: Calculus I	
MAT 152: Calculus II	
MAT 197: Computer Applications	
MAT 261: Statistics	
<b>Instructor</b> – Fisher College	2007–2009
MA 003: Fundamentals of Arithmetic and Algebra	
MA 106: Elementary Algebra	
MA 107: College Algebra	
MA 121: Basic Statistics	
<b>Graduate Instructor</b> – Case Western Reserve University	2004
Math 121: Calculus for Science and Engineering I	

## SERVICE

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<b>Academic Advisor</b>	2021–present
Primary academic advisor of mathematics and business majors	
<b>Drew Summer Science Institute (DSSI)</b>	
Supervised research project	Summer 2022
<i>Knot Theory: An Exploration of Invariants, Visual Representations, and Quantum Money</i> with Breezy Van Patten	
Supervised research project <i>Divisibility, Discrete Logarithms, and Cyclotomic Polynomials</i> with Daniel Kellaway	Summer 2020
<b>Honors Tutorial</b>	Fall 2016
Supervised Honors Tutorial <i>On the constructability of numbers</i> with Jeffrey Moorhead. Jeffrey’s paper was published in the Drew Review; the first math paper in the undergraduate journal’s 10-year history.	
<b>Independent Study</b>	Fall 2020
Supervised independent study in Number Theory	
Supervised independent study in Elliptic Curves	
<b>Supervised Teaching Assistant</b>	2023–present
Supervised Embedded Learning Fellow (ELF) in precalculus course	

Honors Advisory Committee	2019–2022
Academic Integrity Committee	2023–present
Quantitative Reasoning Design Committee	2018–2019
Organized Dartmouth College Logic Seminar	2014–2015

## RESEARCH PAPERS

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*Evasion, Prediction, and On-Line Algorithms*, joint with François Dorais, in preparation.

*Schmerl Decompositions in First-Order Arithmetic*, joint with Zachary Evans, Marcia Groszek, and Theodore Slaman, *Annals of Pure and Applied Logic* 170 (2019), no. 12, 102717.

*On-Line Algorithms and Reverse Mathematics*, Ph.D. Thesis, May 2017.

## PRESENTATIONS

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### American Mathematical Society Eastern Sectional Meeting – Hartford, CT

*Schmerl Decompositions in First-Order Arithmetic* April 2019

### Logic Seminar – Rutgers University

*On-Line Algorithms and Reverse Mathematics* April 2018

### New York Logic Workshop – CUNY Graduate Center

*On-Line Algorithms and Reverse Mathematics* March 2018

### New England Recursion and Definability Seminar – University of Connecticut

*On-Line Algorithms and Reverse Mathematics* April 2017

*Evasion, Prediction, and On-Line Graph Problems* May 2015

### Joint Mathematics Meetings – Atlanta, GA

*On-Line Algorithms and Reverse Mathematics* January 2017

### RISE Talk Series – Drew University

*Reverse Mathematics and Computability* November 2016

### Logic Seminar – Dartmouth College

*Bushy-Tree Forcing and Friedberg’s Lemma* January 2015

*Graph Colorings With and Without  $WKL_0$*  April 2014

*On the strength of proving a finite combinatorial statement infinitely often* October 2013

*The Complexity of the Finite Jordan Curve Theorem* April 2013

*Ramsey’s Theorem for Trees* February 2013

### Graduate Student Seminar – Dartmouth College

*The Reverse Mathematics of Sequential Finite Combinatorics* November 2013

*Three Notions of Algorithmic Randomness* January 2012

*A Crash Course In Computability Theory* July 2011

## ADDITIONAL TEACHING

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### Mathematics Department Teaching Seminar – Dartmouth College

Intensive 10-week seminar preparing graduate students for teaching our first Dartmouth courses. Our class of 6 graduate students designed two week-long summer math camps, *Number Theory* and *Math and Games*, for local middle and high school students. Also read and discussed educational philosophy, worked to improve our public speaking and lecturing skills, and gave guest lectures in Dartmouth courses, which we recorded and critiqued.

**Tutor** – (independent) 2016–present

High school calculus, precalculus, SAT, ACT, GRE, PSAT, etc.

**Team Instructor** – Mass Insight Education, Boston, MA 2004–2006

Mathematics as a Second Language  
Patterns, Relations, and Algebra

Instructed, along with a team, a content-based mathematics training institute for K–8 teachers and math coaches. Accredited by Lesley University as a graduate course in education. Taught eight-day courses *Mathematics as a Second Language* and *Patterns, Relations, and Algebra* for teachers in six urban districts throughout Massachusetts.

**Teaching Assistant** – Center for Talented Youth

*Math Sequence*, Skidmore College Summer 2002

*Reasoning*, Roger Williams University Summer 2001

Collaborated with instructor to teach three-week mathematics courses for gifted students aged 12–16, sponsored by Johns Hopkins University. In *Math Sequence*, I worked one-on-one helping students learn high-school mathematics at their own pace. In *Reasoning*, I also presented topics in logic, set theory, and deductive reasoning.

**Supplemental Instructor** – Case Western Reserve University 2001–2003

Tutored students in calculus and probability, assisted students individually in weekly small group sessions, reviewed and lectured material in weekly large group sessions.

## HONORS

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### Dartmouth College

*Outstanding Graduate Student Teacher* May 2011

*Dartmouth College Graduate Fellowship* 2009–2014

### Society of Actuaries

*Passed SOA Exams MLC, FM, and P* 2003–2007

### Case Western Reserve University

*Max Morris Prize for Outstanding Undergraduate Math Major* April 2003

*Case Alumni Association Scholarship* 2002–2003

*Provost's Scholarship* 1999–2003

## **MEMBERSHIPS**

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Association for Symbolic Logic  
Mathematical Association of America

## **REFERENCES**

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Available upon request.